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ANOTHER NEW *PLECTROHYLA* FROM GUATEMALA

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During the course of pursuing herpetological investigations in the mountains of northwestern Guatemala, I collected, on the crest of the Sierra Madre, a very distinct new species of *Plectrohyla*. For its geographic locale I name this new form

*Plectrohyla cotzicensis* new species

Holotype.—University of Michigan, Museum of Zoology (U.M.M.Z.) No. 95902. An adult male collected April 23, 1942 by L. C. Stuart.

Type locality.—Source of the Rio Cuilco on the slopes of Cerro Cotzic about 2 kilometers northwest of Ixchiguan, Department of San Marcos, Guatemala. Elevation, about 3500 meters.

Paratypes.—Five specimens, U.M.M.Z. Nos. 95903-07, collected with the holotype.

Diagnosis.—A *Plectrohyla* readily distinguishable from all other species of the genus by the possession of an outer tarsal ridge.

Description of holotype.—Teeth prominent, 30 on the maxilla and premaxilla; vomarines in 2 series with 2 teeth in each series, situated between the choanae. Tongue large and almost circular, slightly notched posteriorly.

Head short. Mouth rounded in outline. Rostrum sharply pointed above mouth. Canthus conspicuous, marked by a low ridge. Tympanum barely indicated. A heavy fold extending from posterior corner of eye, above tympanic region and curving downward towards arm insertion. Skin of upper surface, except thighs, strongly but finely tuberculate especially upon the head. Under surfaces except lower legs and feet, heavily and coarsely tuberculate. A fold from the mouth angles extends across the ventrum anterior of the chest.

Legs normally developed, slightly shorter than head-body length. Feet with well-developed webs which leave the last phalange of each digit free except on the inner sides of II, III and V on which the web extends to the terminal disks. Webs incised to penultimate-ultimate joint between digits I-II, II-III, and III-IV and to middle of ultimate phalange between IV-V. Terminal disks well-developed but smaller than those on the hands. A large inner metatarsal tubercle from which a fold of skin extends along the tarsus to the heel. Another fold of skin extending along the tarsus from the base of digit V to the heel.

Arms heavy; a ridge of tubercles extending along fore-arm from the base of the hand to the elbow. Digit I with a simple (catalagenous?) pre-pollex. Outer edge of pre-pollex and pollex conspicuously pigmented. All digits with but the vestiges of webbing. Terminal disks well-developed.

Head-body length, 45 mm.; leg to heel, 36 mm.; foot to tip of digit IV, 34 mm.

In alcohol the upper surfaces are gray, mottled with black; under-surfaces immaculate except throat which is slightly mottled with gray. In life the specimen was bright green above, mottled with brown. The legs were reddish-brown below, the belly a dirty white, and the chin mottled with brown.

Variation.—The five paratypes and a juvenile (U.M.M.Z. 95908) show little variation aside from color. A male (U.M.M.Z. 95905) which was dissected revealed the absence of the quadrate-jugal, a vocal sac and even vocal sac openings. Maxillary teeth in the type series varied 26-30, thus indicating that the species possesses fewer maxillary teeth than any other members of the genus. In all specimens, even the juvenile, the diagnostic outer tarsal fold or ridge is prominent. As a group the rostrum of this species is more pointed, the canthus best defined, and the dorsum more tuberculate than any other members of the genus. The swollen fore-legs are characteristic of breeding males only.

Variation in the pattern in life was considerable. Three specimens were colored as described in the holotype. Three others were bright green above, unmottled, and with a dark streak extending from the nostril, above the eye, to the shoulder. From there it extended on to the thigh in one specimen and broke up into mottlings on the sides in another. One specimen was pale green below.

The juvenile possessed a pattern quite different from that of the adults. Above it was bright green. The lateral dark stripe was sharply demarked. The outer tarsal fold was white and there was, in addition, a white carpal streak. The undersurfaces were lemon yellow. This stripped pattern was not greatly different from that of the juvenile pattern, of *P. ivii*.<sup>1</sup>

The tadpoles, to be described at a later date, are of the general type of "form b" of Hartweg and Orton<sup>2</sup> and of "form z" of Stuart.<sup>3</sup>

Habits and Habitat.—All the specimens of this species were secured from beneath rocks and clumps of sod in shallow tricklets emerging from springs on the flanks of Cerro Cotzie. This region was a marshy area with short-grass cover in the midst of the *pajon* (bunchgrass) covered slopes. The water temperature here was approximately 12°C. A female, collected with the holotype, was filled with large eggs ready for deposition.

The occurrence of *Plectrohyla cotzicensis* at high elevations in the Sierra Madre is somewhat surprising. Aside from the type locality, the only other record of the species is based upon tadpoles secured at 3100 meters several kilometers east of Ixehiguan. At lower elevations (2500 meters) on the flanks of the Sierra Madre *Plectrohyla guatemalensis* completely surrounds *P. cotzicensis*. It may be that this latter, like *Oedipus rostratus* and *Oedipus rex* is discontinuously distributed along the crests of the higher ranges that surmount the Guatemalan Plateau west and north of Guatemala City.

<sup>1</sup>Stuart, L. C., "Descriptions of Two New Species of *Plectrohyla* Brocchi With Comments on Several Forms of Tadpoles." *Occ. Pap. Mus. Zool., Univ. Michigan*, 455, 1942: 13.

<sup>2</sup>Hartweg, Norman and Orton, Grace, "Notes on Tadpoles of the Genus *Plectrohyla*." *Occ. Pap. Mus. Zool., Univ. Michigan*, 438, 1941: 5-6.

<sup>3</sup>Stuart, L. C., *op. cit.*, 10-11, Fig. 4.